

IN THE SPECIFICATION

Please replace paragraph [0020] with the following paragraph:

The imaging system also contains an image processor, such as a general or special purpose computer or a microprocessor chip, such as an ASIC chip. The processor is electrically connected to the electronic detector. The processor forms a three dimensional image of an imaged object from a signal output by the electronic X-ray detector. The processor may use any suitable algorithm to reconstruct a three dimensional image of an imaged object from an arc shaped X-ray source scan. For example, such an algorithm is disclosed in related U.S. patent ~~application serial number 10/~~, (~~attorney docket number 040849/0186~~) No. 6,707,878, to Jeffrey Eberhard and Bernhard Claus titled "Generalized Filtered Back-Projection Reconstruction In Digital Tomosynthesis " filed on the same date as the present application and incorporated herein by reference in its entirety. While less preferred, the method disclosed in U.S. Patent No. 5,872,828, incorporated herein by reference in its entirety, may also be used. If desired, the processor may also be used to control the mechanical driving mechanism motion. Alternatively, a separate controller, such as a computer, microprocessor chip or a motor controller, may be used to control the mechanical driving mechanism motion. In this case, the controller is synchronized with the image processor.

Please replace paragraph [0027] with the following paragraph.

The system 21 of the second preferred embodiment is schematically illustrated in Figure 3. The system 21 also includes an X-ray source 3, such as an X-ray tube. The X-ray source 3 is mounted on the first support, which in the second embodiment also comprises an arc shaped track 5. The mechanical driving mechanism of the first embodiment comprises a first arm 27. Preferably, the first arm 27 is made relatively thin and light weight to minimize its mass, but has sufficient rigidity to move the X-ray source

3 along the track 5. The first arm ~~may~~²⁷ may comprise a cylindrical or a plate shaped arm which connects the X-ray source 3 to a shaft 29. As shown in Figure 3, the shaft 29 extends in and out of the page. The shaft 29 is turned by a motor or other rotation imparting device (not shown). The step motion of the X-ray source 3 is produced from the shaft 29 torque through the arm 27. The electronic detector 9 is located facing the X-ray source 3 such that an imaging area 11 is formed above the electronic detector 9.

Please replace paragraph [0040] with the following paragraph.

The relative rotational movement of pivot plate 44 and track 45 around pin 43 allows movement of the first arm ~~13~~⁴⁷ relative to track 45. Preferably, the second arm 13 supporting the detector 9 remains stationary while the track 45 moves relative to the second arm. The first arm 47 and the second arm 13 are rotatably connected by shaft 49. The movement of the track 45 relative to second arm 13 allows translation of the linear motion of the lower portion of the first arm 47 along track 45 into arc shaped motion of the X-ray source 3 mounted to the upper portion of the first arm 47, as shown in Figures 8 and 9. The X-ray source 3 moves from a right side position in Figure 8 along the arc shaped path into a left side position relative to the second arm 13 in Figure 9. At the same time, the track 45 moves from an first position in Figure 8 to a second position in Figure 9 relative to the second arm 13, while the lower portion of the first arm 47 moves from left in Figure 8 to right in Figure 9 to achieve the arc shaped path of the X-ray source 3. Thus, the track 45 moves vertically relative to the shaft 49 during movement of the first arm 47 to translate linear motion along track 45 into arc shaped motion.

Please replace paragraph [0041] with the following paragraph.

Figure 10 is a three dimensional illustration of system 41 of the fourth preferred embodiment. Figure 10 shows the connector 48 which connects the ~~second~~^{first} arm 47

and the X-ray source 3. The connector 48 extends over the second arm 13 and allows the first arm 47 and the X-ray source 3 to move on opposite sides of the second arm 13.